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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,446

12/27/2005

Hideaki Matsuhashi

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EXAMINER

DAVIS, MARY ALICE

ART UNIT

PAPER NUMBER

3748

MAIL DATE

DELIVERY MODE

10/09/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/562,446

Applicant(s)

MATSUHASHI, HIDEAKI

Examiner

Mary A. Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

This Office Action is in response to the Terminal Disclaimer filed on September 20, 2007. Upon further consideration, the Examiner has uncovered prior art references which are deemed pertinent to the patentability of the current application, and therefore, has re-opened prosecution. This is a non-final rejection.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claims 14-18 are rejected under 35 U.S.C. 102(b) as being anticipated by BISHOP (World Intellectual Organization Publication Number WO 89/08522).***

Regarding claim 14, BISHOP discloses:

- A method for machining a scroll wrap, comprising:
- forming a stationary scroll having an end plate and a scroll wrap extending from said end plate thereof (see Figures 1-2, Page 2, lines 12 - 14), said scroll wrap of said stationary scroll having a side face (see Figures 1-2 which show that the stationary scroll has a side face) (see Page 1, lines 13 - 17),
- forming a slewing scroll having an end plate and a scroll wrap extending from said end plate thereof (see Figures 3-4, Page 2, lines 12 - 14), said scroll wrap of said slewing scroll having a side face (see Figures 3-4 which show that the slewing scroll has a side face) (see Page 1, lines 13 - 17),

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- wherein said side face of said stationary scroll wrap and said side face of said slewing scroll wrap are configured to slide with respect to each other in use (Page 1, lines 18 – 34); and
- Hale-machining said side face of one of said stationary scroll wrap and said slewing scroll wrap by moving a non-rotational tool along a longitudinal direction of said one of said stationary scroll wrap and said slewing scroll wrap (see Figures 1, 5-7, and 12 – 17; Page 11, line 27+).

Regarding claim 15, BISHOP discloses:

- the non- rotational tool has a length greater than a height of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7).

Regarding claim 16, BISHOP discloses:

- cutting-machining by end milling both said side face of said one of said stationary scroll wrap and said slewing scroll wrap and a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends (see Figures 9 – 11 and 15; Page 11, lines 17 – 26 and Page 15, lines 27 - 33),
- wherein both said Hale-machining and said cutting-machining are performed while the one of said stationary scroll and said slewing scroll having said one of said stationary scroll wrap and said slewing wrap is fixed in a chuck (see Figure 15, Page 11, line 32 – Page 16, line 25).

Regarding claim 17, BISHOP discloses:

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- machining a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends with the same non-rotational tool used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7 which shows that the end plate is also machined with the same non-rotational tool used for Hale-machining the side faces); and
- performing a finish cutting with a different non-rotational tool than that used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figures 9 – 11 and 15; Page 11, lines 17 – Page 16, line 25);
- wherein said Hale-machining, said machining, and said finish cutting are performed while the one of said stationary scroll and said slewing scroll having said one of said stationary scroll wrap and said slewing scroll wrap is fixed in a chuck (see Figure 15; Page 11, lines 17 – Page 16, line 25).

Regarding claim 18, BISHOP discloses:

- simultaneously machining a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends with the same non-rotational tool used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7 which shows that the end plate is simultaneously being machined using the same non-rotational tool (11 or 12) used for Hale-machining the side faces).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP.***

BISHOP discloses the claimed invention, however, fails to disclose machining a surface of the end plate with a different non-rotational tool than the Hale-machining tool, which was used for machining the side faces of the stationary scroll wrap.

It is the examiner's position that having a different non-rotational tool to machine the end-plate from the Hale-machining tool used for the side faces would have been obvious to one having ordinary skill in the art. More specifically, one having ordinary skill in the art would have generated a separate tool in order to machine the end-face in what ever shape or configuration desired. Utilization of two tools to perform the same machining as one tool involves only routine skill in the art.

***Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP.***

Regarding claim 20, BISHOP discloses:

- said side face of said one of said stationary scroll wrap and said slewing scroll wrap includes an inner side face and an outer side face (see Figures 1-4 which show the inner and outer side faces of the scrolls).

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However, he does not disclose the Hale-machining is performed on said inner side face and said outer side face in any one of an order from said inner side face to said outer side face and an order from said outer side face to said inner side face.

BISHOP discloses using two separate non-rotational tools to machine the inner and outer side faces of the scroll wraps simultaneously (see Figures 5-7), as well as, utilizing one Hale-machining tool to machine the inner and outer wraps (see Figures 12-14). It is the examiner's position that the order of machining comprising of machining the inner than the outer wraps or the outer than the inner wraps would have been obvious to one having ordinary skill in the art when machining the scroll wraps using only one Hale machining tool. Generation of the order of machining when utilizing one Hale-machining tool involves only routine skill in the art.

***Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP in view of NIWA ET AL (U.S. Patent Number 4,615,091).***

BISHOP discloses the claimed invention as discussed above in claim 14, however, fails to disclose the resulting surface roughness of said side face of said one of said stationary scroll wrap and said slewing scroll wrap measures one micrometer at most.

The resulting surface roughness being one micrometer at most is a design resultant variable. NIWA ET AL discloses a cutting edge that depending on the amount of indexing would result in the desired size and finish (Column 1, lines 44 – 65).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have generated a surface roughness of less than one

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micrometer or any desired roughness, by changing the number of passes in the Hale-machining process of BISHOP.

**Communication**

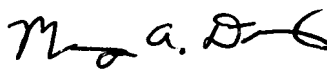
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. Davis whose telephone number is (571) 272-9965. The examiner can normally be reached on Monday thru Friday; (Second Friday off) 7am - 3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


MAD

10/3/07



/Mary A. Davis/

Patent Examiner Art Unit: 3748



THOMAS DENION

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